

09/527,275

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REMARKS

Applicants appreciate the Examiner's participation in a telephonic interview conducted on March 27, 2003 during which some proposed amendments were discussed.

Claim Amendments

Applicants have cancelled Claims 1-56 and 59 to expedite prosecution of the application, but reserve the right to file a continuing or divisional application, or take such other appropriate action as deemed necessary to protect the invention as claimed in Claims 1-56 and 59.

Claims 57 and 58 have been amended, and new Claim 60 added. These claims are directed to compositions that consist of, or consist essentially of, the two cytokines GDNF and TGF- β .

Support for these amendments can be found throughout the specification, for example, at page 13, line 9 through page 14, line 8 and Figures 6A-D.

Rejection of Claims 1, 2, 5, 16 and 57-59 Under 35 U.S.C. §102(b)

Claims 1, 2, 5, 16 and 57-59 are rejected by the Examiner under 35 U.S.C. §102(b) as being anticipated by Goulin *et al.* (J. Neurosci. Res. February 15, 1996).

In light of Applicants' cancellation of Claims 1, 2, 5, 16 and 59, the rejection of these claims is moot. With respect to Claims 57 and 58, Applicants respectfully disagree. Goulin *et al.* discloses the following compositions:

- (i) NGF + FGF-2 (for example, at p. 459)
- (ii) CNTF + FGF-2 (for example, at p. 459)
- (iii) TGF β 3 + FGF-2 (for example, at p. 459, 460)
- (iv) GDNF + FGF-2 (for example, at p. 460)
- (v) TGF β 3 + GDNF + FGF-2 (for example, at p. 461)

Claims 57 and 58, as amended, recite a "composition having synergistic neurotrophic activity consisting of two cytokines, wherein the two cytokines are GDNF and TGF- β" Applicants amendment to recite "two cytokines" is to further make clear that GDNF and TGF- β are cytokines, although this was already well known to one of ordinary skill in the art at the time of filing of the application. Goulin *et al.* do not disclose a composition consisting of GDNF and TGF- β , thus Goulin *et al.* does not anticipate Claims 57 and 58, as amended.

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Furthermore, the Examiner has stated that the serum-free culture medium of Goulin *et al.* is a pharmaceutically-acceptable carrier, diluent, or any combination thereof (Office Action, page 3). However, Applicants respectfully disagree because one of ordinary skill in the art would not consider complete basal medium containing, *inter alia*, insulin, sodium selenite, progesterone, putrescine, penicillin and streptomycin (page 455, column 1-2, bridging paragraph) a pharmaceutically-acceptable carrier or diluent. The combination of these hormones and antibiotics together with putrescine (defined in Stedman's Medical Dictionary, 26th Edition, as "a poisonous polyamine", attached as Exhibit A) and sodium selenite (which, in high quantities is known to be toxic, see the Material Safety Data Sheet obtained from Sigma Chemical Co., attached as Exhibit B), would not be considered a pharmaceutically-acceptable carrier or diluent by one of ordinary skill in the art.

Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection of Claim 59 Under 35 U.S.C. §112, Second Paragraph

Claim 59 is rejected by the Examiner under 35 U.S.C. §112, Second Paragraph "as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention." In view of Applicants' cancellation of Claim 59, the rejection is moot.

Provisional Double-Patenting Objection

The Examiner advised the Applicants that should Claim 57 be found allowable, Claim 59 will be "objected to under 37 C.F.R. 1.75 as being a substantial duplicate thereof." As noted above, Applicants have cancelled Claim 59, thus the rejection is moot.

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CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned at (978) 341-0036.

Respectfully submitted,

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MARKED UP VERSION OF AMENDMENTSClaim Amendments Under 37 C.F.R. § 1.121(c)(1)(ii)

57. (Twice Amended) A composition having a synergistic neurotrophic activity[, comprising]
consisting of two cytokines, wherein the two cytokines are GDNF and TGF- β , or functionally
active derivatives or parts thereof.
58. (Twice Amended) A composition having a synergistic neurotrophic activity[, comprising]
consisting of two cytokines, wherein the two cytokines are GDNF and TGF- β , or functionally
active derivatives or parts thereof, and further comprising a pharmaceutically acceptable
carrier, diluent or any combination thereof.

STEDMAN'S

Medical Dictionary

26th Edition

ILLUSTRATED IN **COLOR**



Williams & Wilkins
Baltimore - Philadelphia - Hong Kong
London - Munich - Sydney - Tokyo
A WEAVERLY COMPANY

EXHIBIT

A

purpura

ma of the subcutaneous and submucous tissues. SYN petechial fever.

Henoch's p. SYN Henoch-Schönlein p.

Henoch-Schönlein p., an eruption of nonthrombocytopenic purpuric lesions due to dermal leukocytoclastic vasculitis with IgA in vessel walls associated with joint pain and swelling, colic, and in vessel walls associated with joint pain and swelling, colic, and in passage of bloody stools, and occurring characteristically in young children; glomerulonephritis may occur during an initial episode or develop later. SYN acute vascular p., anaphylactoid p. (2), hemorrhagic exudative erythema, Henoch's p., Henoch-Schönlein syndrome, p. nervosa, p. rheumatica, Schönlein's disease, Schönlein's p., Schönlein-Henoch syndrome.

hyperglobulinemic p. SYN Waldenström's macroglobulinemia.

idiopathic thrombocytopenic p. (ITP), a systemic illness characterized by extensive ecchymoses and hemorrhages from immune destruction by extensive ecchymoses and hemorrhages from immune destruction by very low platelet counts; resulting from platelet destruction by macrophages due to an antiplatelet factor; childhood cases are usually brief and rarely present with intracranial hemorrhages, but adult cases are often recurrent and have a higher incidence of grave bleeding, especially intracranial. SYN immune thrombocytopenic p., p. hemorrhagica (1), thrombocytopenic p.

immune thrombocytopenic p. SYN idiopathic thrombocytopenic p.

p. iodica, ladic p., an eruption of discrete solitary petechiae, usually confined to the lower extremities, appearing in rare instances on administration of any of the iodides.

p. nervosa, SYN Henoch-Schönlein p.

nonthrombocytopenic p. SYN p. simplex.

psychogenic p. SYN autoerythrocyte sensitization syndrome.

p. pulicans, p. pulicosa, petechiae caused by the bites of insects and animal parasites.

p. rheumatica, SYN Henoch-Schönlein p.

Schönlein's p. SYN Henoch-Schönlein p.

p. senilis, the occurrence of petechiae and ecchymoses on the atrophic skin of the legs in aged and debilitated subjects.

p. simplex, the eruption of petechiae or larger ecchymoses, usually unaccompanied by constitutional symptoms and not associated with systemic illness. SYN nonthrombocytopenic p.

p. symptomatica, a petechial eruption in scarlet fever and other exanthemas.

thrombocytopenic p. SEE idiopathic thrombocytopenic p.

thrombotic p. SYN idiopathic thrombocytopenic p.

thrombotic thrombocytopenic p., a rapidly fatal or occasionally protracted disease with varied symptoms in addition to p., including signs of central nervous system involvement, due to formation of fibrin or platelet thrombi in arterioles and capillaries in many organs. SYN Moschcowitz' disease.

p. urticans, p. simplex accompanied by an urticarial eruption.

Waldenström's p. SYN Waldenström's macroglobulinemia.

pur-pu-rea gly-co-sides A, pur-pu-rea gly-co-sides B (per-pu-rē'ā glīkō-sīdz). The cardioactive precursor glycosides of *Digitalis purpurea*; they are structurally identical with desacetyl-lanatosides A and B, respectively. SEE also lanatosides A, B, and C.

pur-pu-ric (pūr-pū'rik). Relating to or affected with purpura.

pur-pu-rin (pūr-pū'rin). 1. SYN uroerythrin. 2 [C.I. 58205]. A violet stain related to alizarin by addition of a 4-OH group to alizarin; found in madder root and other members of the *Rubiaceae*; used to detect calcium salts, boron, and as a histological stain. SYN alizarin purpurin.

pur-pu-ri-nu-ria (pūr-pū'ri-nū-rē-ā) SYN porphyria.

purp (per). A low vibratory murmur. SYN frémissement catarrhe.

Purtscher, Otmur, German ophthalmologist. 1852-1927. SEE P.'s disease.

pu-ru-lence, pu-ru-len-cy (pyū'rū-lens, -len-ē: pyū'rū-lens). The condition of containing or forming pus. [L. *purulentus*, a festering. fr. *pus* (pur-), pus]

pu-ru-lent (pyū'rū-lens, pyū'rū-). Containing, consisting of, or forming pus.

pu-ru-loid (pyū'rū-loyd). Resembling pus.

putrescine

pus (pūs). A fluid product of inflammation, consisting of a liquid containing leukocytes and the debris of dead cells and tissue elements liquefied by the proteolytic and histolytic enzymes (e.g., leukoprotease) that are elaborated by polymorphonuclear leukocytes. [L.]

blue p., p. ringed with pyocyanin, a product of *Pseudomonas aeruginosa*.

cheesy p., a very thick almost solid p. resulting from the absorption of the liquor puris.

curdy p., p. containing flakes of caseous matter.

green p., blue p. when, as sometimes happens, it has more of a green hue.

ichorous p., thin p. containing shreds of sloughing tissue and sometimes of a fetid odor.

laudable p., an obsolete term used when suppuration was considered unlikely to lead to pyemia (blood poisoning) but more likely to remain localized.

sanguis p., ichorous p. stained with blood.

pus tu-lant (pūs'chū-lant). 1. Causing a pustular eruption. 2. An agent producing pustules.

pus tu-lar (pūs'chū-lār). Relating to or marked by pustules.

pus tu-la-tion (pūs'chū-lā-shūn). The formation or the presence of pustules.

pus-tule (pūs'chūl). A small circumscribed elevation of the skin containing purulent material. [L. *pustula*]

malignant p., SYN cutaneous anthrax

postmortem p., obsolete term for an ulcer, usually on the neck, resulting from infection during a dissection or the performance of an autopsy

spongiform p. of Koguj, an epidermal p. formed by infiltration of neutrophils into necrotic epidermis in which the cell walls persist as a spongelike network; seen in pustular psoriasis

pus-tu-li-form (pūs'chū-li-tōrm) Having the appearance of a pustule

pus-tu-lo-crus-ta-ceous (pūs'chū-lō-krus-tā-shūs). Marked by pustules crusted with dry pus.

pus tu-lo-sis (pūs'chū-lō-sis). 1. An eruption of pustules. 2. Term occasionally used to designate acropustulosis. [L. *pustula*, + G. *-osis*, condition]

p. palmaris et plantaris, a sterile pustular eruption of the fingers and toes, variously attributed to dyshidrosis, pustular psoriasis, and unidentified bacterial infection. SYN acrodermatitis continua, acrodermatitis perstans, dermatitis repens, Hallopeau disease (1).

p. vaccini-formis acuta, SYN *eczema herpeticum*.

pu-ta-men (pyū-tā'men) [NA]. The outer, larger, and darker gray of the three portions into which the lenticular nucleus is divided by laminae of white fibers; it is connected with the caudate nucleus by bridging bands of gray substance that penetrate the internal capsule. Its histological structure is similar to that of the caudate nucleus together with which it composes the striatum. SEE ALSO striate body, lenticular nucleus. [L. that which falls in pruning. fr. *puto*, to prune]

Putnam, James J., U.S. neurologist, 1846-1918. SEE P.-Dance syndrome.

pu-tre-fac-tion (pyū-tri-fak'shūn). Decomposition or rotting; breakdown of organic matter usually by bacterial action, resulting in the formation of other substances of less complex composition with the evolution of ammonia or its derivatives and hydrogen sulfide; characterized usually by the presence of foul, malodorous products. SYN decay (2), decomposition. [L. *putrefacio*, pp. *-factus*, to make rotten]

pu-tre-fac-tive (pyū-tri-fak'tiv). Relating to or causing putrefaction.

pu-tre-fy (pyū-tri-fī). To cause to become, or to become, putrefied.

pu-tre-scence (pyū-tres-ens). The state of putrefaction.

pu-tre-scent (pyū-tres-ent). Denoting, or in the process of, putrefaction. [L. *putresco*, to grow rotten, fr. *puter*, rotten]

pu-tre-scine (pyū-tres-en). $\text{NH}_2(\text{CH}_2)_4\text{NH}_2$; 1,4-Diaminobutane, a poisonous polyamine formed from the amino acid, arginine

putrescine

during putrefaction; is a precursor to γ-aminobutyric acid.

putrid (pyū'trid). putrefaction. [L. *putr*]

Putti, Vittorio, Italian procedure.

PURA Acronym for subsequent exposure used to treat psoriasis

PVC Abbreviation for polyvinyl chloride

PVP Abbreviation for polyvinylpyrrolidone

p with a sub-script is constant.

PWM Abbreviation for pulse-width modulation

py-ar-thro-sis (pi-pyon, pus, + arthro)

pyel- SEE pyel-

pye-lec-ta-sis, **pye-**

Dilation of the pelvis

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putrescine

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pyemia

during putrefaction; found in urine and feces; in certain cells, p. is a precursor to γ -aminobutyrate

putrid (pyū'trid). 1. In a state of putrefaction. 2. Denoting putrefaction [*L. putridus*]

Putti, Vittorio, Italian surgeon. 1880-1940 *see* P.-Platt operation, procedure.

PVVA Acronym for oral administration of psoralen and subsequent exposure to long wavelength ultraviolet light (uv-a); used to treat psoriasis.

PVC Abbreviation for polyvinyl chloride.

PVP Abbreviation for polyvinylpyrrolidone.

P with a sub script for the ion. Abbreviation for permeability constant.

PWM Abbreviation for pokeweed mitogen

py-ar-thro-sis (pī-ar-thrō'sis). *syn* suppurative arthritis. [*G. pyon, pus, + arthrosis, a jointing*]

Pychnu-. *see* pykno-

pyel-. *see* pyelo-

py-e-lec-ta-sis, py-e-lec-ta-sia (pī-ē-lek'tā-sis, pī-ē-lek'tā'si-ā). Dilatation of the pelvis of the kidney [*pyel- + G. ek-tasis, extension*]

py-e-lit-ic (pī-ē-lit'ik). Relating to pyelitis.

py-e-lit-is (pī-ē-lit'is). 1. Inflammation of the renal pelvis. 2. Obsolete term for pyelonephritis. [*pyel- + G. -itis, inflammation*]

pyelo-, pyel-. Pelvis, usually the renal pelvis. [*G. pyelos, trough, tub, vat*]

py-e-lo-cal-i-ce-al (pī-ē-lō-kāl'i-sē'āl). Relating to the renal pelvis and calices. *syn* pyelocalyceal.

py-e-lo-cal-i-ce-ta-sis (pī-ē-lō-kāl'ē-ek'tā-sis). *syn* caliectasia.

py-e-lo-cal-y-ce-al (pī-ē-lō-kāl'i-sē'āl). *syn* pyelocalyceal.

py-e-lo-cys-ti-tis (pī-ē-lō-sis-tit'is). Inflammation of the renal pelvis and the bladder. [*pyelo- + G. kystis, bladder, + -itis, inflammation*]

py-e-lo-flu-u-ro-s-co-py (pī-ē-lō-flūr-ōs'kō-pē). Fluoroscopic examination of the renal pelvis and ureters, following administration of contrast medium [*pyelo- + L. fluo, to flow, + G. skopō, to view*]

py-el-o-gram (pī-el-ō-gram). A radiograph or series of radiographs of the renal pelvis and ureter, following injection of contrast medium.

py-e-log-ra-phy (pī-ē-log'ra-fē). Radiologic study of the kidney, ureters, and usually the bladder, performed with the aid of a contrast agent either injected intravenously, or directly through a ureteral or nephrostomy catheter or percutaneously. *syn* pelviurography, pyeloureterography, ureteropyelography. [*pyelo- + G. graphō, to write*]

retrograde p., antegrade urography in which the contrast medium is injected into the renal calices or pelvis

intravenous p. (IVP), former name for intravenous urography.

retrograde p., p. in which contrast material is injected into the ureters from an endoscope in the bladder.

py-e-lo-li-thor-o-my (pī-ē-lō-li-thor'ō-mē). Operative removal of calculus from the kidney through an incision in the renal pelvis. *syn* pelvolithotomy, pelviolithotomy. [*pyelo- + G. lithos, stone, + -ia, incision*]

py-e-lo-lym-phat-ic (pī-ē-lō-lim-fat'ik). Pertaining to the lymphatics of the renal pelvis.

py-e-lo-ne-phri-tis (pī-ē-lō-ne-frīt'is). Inflammation of the renal parenchyma, calyces, and pelvis, particularly due to local bacterial infection [*pyelo- + G. nephros, kidney, + -itis, inflammation*]

acute p., acute inflammation of the renal parenchyma and pelvis characterized by small cortical abscesses and yellowish streaks in the medulla due to pus in the collecting tubules and interstitial tissue.

ascending p., p. due to bacterial infection from the lower urinary tract, particularly by reflux of infected urine

chronic p., chronic inflammation of the renal parenchyma and pelvis resulting from bacterial infection, characterized by calyce-

al deformities and overlying large flat renal scars with patchy distribution.

contagious bovine p., a specific necrotizing inflammation of the renal pelvis and ureters of cattle, caused by infection with *Corynebacterium renale*.

xanthogranulomatous p., a chronic inflammatory condition diffusely involving the entire kidney and usually resulting in a grossly enlarged and functionless kidney which can grossly resemble a neoplasm or tuberculosis; histologically, it is characterized by an inflammatory reaction with numerous lipid-laden, foamy histiocytes mixed with lymphocytes and plasma cells to form multiple granulomas

py-e-lo-ne-phro-sis (pī-ē-lō-ne-frō'sis). Obsolete term for any disease of the pelvis of the kidney. [*pyelo- + G. nephros, kidney, + -osis, condition*]

py-e-lo-plas-ty (pī-ē-lō-plas-tē). Surgical reconstruction of the kidney pelvis to correct an obstruction. *syn* pelvioplasty (2). [*pyelo- + G. plas-tos, formed*]

Anderson-Hynes p., disjointed or dismembered p.

capsular flap p., a reconstructive procedure for correction of uteropyelvic obstruction, whereby a flap of renal capsule is swung down from the renal hilum to enlarge an obstructed intrarenal pelvis and upper ureter; used to correct situations involving loss of renal pelvic tissue which preclude the use of renal pelvis for the reconstruction.

Culp p., a reconstructive technique for correction of uteropyelvic obstruction, whereby a spiral flap of renal pelvis is brought down and interposed into a vertical incision in the ureter *see also* Scardino vertical flap p.

disjointed p., dismembered p., a reconstructive procedure for correction of uteropyelvic obstruction, whereby the obstructed segment is resected and the upper ureter reanastomosed into the lower renal pelvis, usually utilizing a modified elliptical anastomotic technique.

Foley Y-plasty p., a reconstructive procedure for correction of uteropyelvic obstruction, whereby a Y-shaped flap of renal pelvis is advanced downward into a vertical incision in the upper ureter, thereby widening the uteropyelvic junction *syn* Foley operation.

Scardino vertical flap p., a reconstructive technique for correction of uteropyelvic obstruction, whereby a vertical flap of renal pelvis is brought down and interposed into a vertical incision in the ureter. *Cf.* Culp p.

py-e-lo-pli-ca-tion (pī-ē-lō-pli-kā'shūn). An obsolete procedure of taking tucks in the wall of the renal pelvis when unduly dilated by a hydronephrosis. [*pyelo- + L. plico, to fold*]

py-e-los-co-py (pī-ē-lōs'kō-pē). Fluoroscopic observation of the pelvis and calices of the kidney, and the ureter, after the injection through the ureter of an opaque solution. [*pyelo- + G. skopō, to view*]

py-e-los-to-my (pī-ē-lōs'tō-mē). Formation of an opening into the kidney pelvis to establish urinary drainage. [*pyelo- + G. stoma, mouth*]

py-e-lot-o-my (pī-ē-lōr'ō-mē). Incision into the pelvis of the kidney. *syn* pelviotomy (3), pelvitomy. [*pyelo- + G. tomē, incision*]

extended p., extension of a standard p. into the lower pole infundibulum through the avascular plane between the posterior and basilar segmental renal arteries *syn* Gil-Vernet operation.

py-e-lo-u-re-ter-ec-ta-sis (pī-ē-lō-yū-rē'ter-ek'tā-sis). Dilatation of kidney pelvis and ureter, seen in hydronephrosis due to obstruction in the lower urinary tract [*pyelo- + ureter + G. ek-tasis, stretching*]

py-e-lo-u-re-ter-og-ra-phy (pī-ē-lō-yū-rē'ter-og'rā-fē). *syn* pyelography.

py-e-lo-ve-nous (pī-ē-lō-vē'nās). Denoting the phenomenon of drainage from the renal pelvis into the renal veins from increased intrapelvic pressure. [*pyelo- + venous*]

py-em-e-sis (pī-em'ē-sis). The vomiting of pus [*G. pyon, pus, + emesis, vomiting*]

py-e-mi-a (pī-ē'mē-ā). Septicemia due to pyogenic organisms

alld 02/2003 - 04/2003

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M A T E R I A L S A F E T Y D A T A S H E E T

SECTION 1. - - - - - CHEMICAL IDENTIFICATION - - - - -
CATALOG #: S9133
NAME: SODIUM SELENITE GAMMA-IRRADIATED CELL
CULTURE TESTED

SECTION 2. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - -
CAS #: 10102-18-8
MF: NA2O3SE
EC NO: 233-267-9

SYNONYMS
DISODIUM SELENITE - NATRIUMSELENIT (GERMAN) -
SECTION 3. - - - - - HAZARDS IDENTIFICATION - - - - -

LABEL PRECAUTIONARY STATEMENTS

HIGHLY TOXIC (USA)
VERY TOXIC (EU)
TOXIC BY INHALATION.
VERY TOXIC IF SWALLOWED.
DANGER OF CUMULATIVE EFFECTS.
LIMITED EVIDENCE OF CARCINOGENIC EFFECT.
RISK OF SERIOUS DAMAGE TO EYES.
VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE
EFFECTS IN THE AQUATIC ENVIRONMENT.
POSSIBLE MUTAGEN.

TARGET ORGAN(S):

LIVER

BLOOD

CAUSES SEVERE EYE IRRITATION.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
WATER AND SEEK MEDICAL ADVICE.AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF SOAP SUDS.
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE

IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF AS
HAZARDOUS WASTE.AVOID RELEASE TO THE ENVIRONMENT. REFER TO SPECIAL INSTRUCTIONS/
SAFETY DATA SHEETS.

MOISTURE SENSITIVE

SECTION 4. - - - - - FIRST-AID MEASURES - - - - -
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.

CALL A PHYSICIAN IMMEDIATELY.

IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.IN CASE OF SKIN CONTACT, FLUSH WITH COPIOUS AMOUNTS OF WATER
FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND
SHOES. CALL A PHYSICIAN.IN CASE OF CONTACT WITH EYES, FLUSH WITH COPIOUS AMOUNTS OF WATER
FOR AT LEAST 15 MINUTES. ASSURE ADEQUATE FLUSHING BY SEPARATING
THE EYELIDS WITH FINGERS. CALL A PHYSICIAN.

SECTION 5. - - - - - FIRE FIGHTING MEASURES - - - - -
EXTINGUISHING MEDIA
NONCOMBUSTIBLE.

EXHIBIT

B

3/2

http://www.sigma-aldrich.com/cgi-bin/gx.cgi/Applogic+MSDSInfo.ReturnMSDS

USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.
SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO
PREVENT CONTACT WITH SKIN AND EYES.
UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.
SECTION 6. - - - - - ACCIDENTAL RELEASE MEASURES - - - - -
WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY
RUBBER GLOVES.
SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.
AVOID RAISING DUST.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.
EVACUATE AREA.
SECTION 7. - - - - - HANDLING AND STORAGE - - - - -
REFER TO SECTION 8.
SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION - - - - -
SAFETY SHOWER AND EYE BATH.
USE ONLY IN A CHEMICAL FUME HOOD.
WASH CONTAMINATED CLOTHING BEFORE REUSE.
WASH THOROUGHLY AFTER HANDLING.
DO NOT BREATHE DUST.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
NIOSH/MSHA-APPROVED RESPIRATOR.
COMPATIBLE CHEMICAL-RESISTANT GLOVES.
CHEMICAL SAFETY GOGGLES.
KEEP TIGHTLY CLOSED.
STORE IN A COOL DRY PLACE.
SECTION 9. - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - -
PHYSICAL PROPERTIES
MELTING POINT: 350 C
SWISS POISON CLASS: 1
SECTION 10. - - - - - STABILITY AND REACTIVITY - - - - -
STABILITY
STABLE.
INCOMPATIBILITIES
PROTECT FROM MOISTURE.
STRONG ACIDS
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
SELENIUM/SELENIUM OXIDES
HAZARDOUS POLYMERIZATION
WILL NOT OCCUR.
SECTION 11. - - - - - TOXICOLOGICAL INFORMATION - - - - -
ACUTE EFFECTS
MAY CAUSE SKIN IRRITATION.
MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.
CAUSES SEVERE EYE IRRITATION.
MATERIAL MAY BE IRRITATING TO MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.
TOXIC IF INHALED.
MAY BE FATAL IF SWALLOWED.
EXPOSURE CAN CAUSE:
NAUSEA, DIZZINESS AND HEADACHE
ANEMIA
SALIVATION
TREMORS
ALOPECIA
VOMITING
DERMATITIS
CHRONIC EFFECTS
TARGET ORGAN(S):
LIVER
BLOOD
KIDNEYS

EYES

LABORATORY EXPERIMENTS HAVE SHOWN MUTAGENIC EFFECTS.

THIS PRODUCT IS OR CONTAINS A COMPONENT THAT IS NOT CLASSIFIABLE AS TO ITS CARCINOGENICITY BASED ON ITS IARC, ACGIH, NTP OR EPA CLASSIFICATION.

RTECS #: VS7350000

SELENIOS ACID, DISODIUM SALT

TOXICITY DATA

ORL-RAT LD50:7 MG/KG
IVN-RAT LD50:3 MG/KG
PAR-RAT LD50:6570 UG/KG
ORL-MUS LD50:7080 UG/KG
SCU-MUS LD50:13 MG/KG
IVN-MUS LD50:5 MG/KG
ICV-MUS LD50:300 UG/KG
IVN-DOG LD50:1916 UG/KG
ORL-RBT LD50:2250 UG/KG
35(1-3), 176, 1970
IMS-RBT LD50:2530 UG/KG
ORL-GPG LD50:5060 UG/KG
PAR-CKN LD50:8500 UG/KG
ORL-HOR LD50:13 MG/KG
IMS-DOM LD50:1533 UG/KG

TXAPA9 20,89,1971
EQSSDX 1,1,1975
CTOXAO 17,171,1980
GISAAA 35(2),14,1970
SAIGBL 17,491,1975
NRTXDN 2,383,1981
NRTXDN 2,383,1981
PSDAA2 36,173,1957
HYSAAV

AXVMAW 30,627,1976
GISAAA 35(2),14,1970
NEPHBW 25,493,1990
AJVRAH 41,1925,1980
VHTODE 29,233,1987

TARGET ORGAN DATA

BRAIN AND COVERINGS (RECORDINGS FROM SPECIFIC AREAS OF CNS)
PERIPHERAL NERVE AND SENSATION (FLACCID PARALYSIS WITHOUT ANESTHESIA)
SENSE ORGANS AND SPECIAL SENSES (OTHER OLFACTION EFFECTS)
BEHAVIORAL (SOMNOLENCE)
BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD)
BEHAVIORAL (CHANGE IN MOTOR ACTIVITY)
BEHAVIORAL (MUSCLE CONTRACTION OR SPASTICITY)
CARDIAC (ARRHYTHMIAS)
CARDIAC (PULSE RATE INCREASED WITHOUT FALL IN BP)
CARDIAC (OTHER CHANGES)
LUNGS, THORAX OR RESPIRATION (ACUTE PULMONARY EDEMA)
LUNGS, THORAX OR RESPIRATION (DYSPNAE)
LUNGS, THORAX OR RESPIRATION (CYANOSIS)
LUNGS, THORAX OR RESPIRATION (RESPIRATORY STIMULATION)
LUNGS, THORAX OR RESPIRATION (OTHER CHANGES)
GASTROINTESTINAL (CHANGES IN STRUCTURE OR FUNCTION OF SALIVARY GLANDS)
GASTROINTESTINAL (HYPERMOTILITY, DIARRHEA)
GASTROINTESTINAL (NAUSEA OR VOMITING)
ENDOCRINE (HYPOGLYCEMIA)
PATERNAL EFFECTS (SPERMATOGENESIS)
PATERNAL EFFECTS (TESTES, EPIDIDYMIS, SPERM DUCT)
PATERNAL EFFECTS (OTHER EFFECTS ON MALE)
MATERNAL EFFECTS (UTERUS, CERVIX, VAGINA)
EFFECTS ON FERTILITY (POST-IMPLANTATION MORTALITY)
EFFECTS ON FERTILITY (LITTER SIZE)
EFFECTS ON EMBRYO OR FETUS (EXTRA EMBRYONIC STRUCTURES)
EFFECTS ON EMBRYO OR FETUS (FETOTOXICITY)
EFFECTS ON NEWBORN (LIVE BIRTH INDEX)
EFFECTS ON NEWBORN (VIABILITY INDEX)
EFFECTS ON NEWBORN (WEANING OR LACTATION INDEX)
EFFECTS ON NEWBORN (GROWTH STATISTICS)
NUTRITIONAL AND GROSS METABOLIC (WEIGHT LOSS OR DECREASED WEIGHT GAIN)
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

SECTION 12. - - - - - ECOLOGICAL INFORMATION - - - - -
DATA NOT YET AVAILABLE.SECTION 13. - - - - - DISPOSAL CONSIDERATIONS - - - - -
CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL.

3/25

www.aldrich.com/cgi-bin/gx.cgi/Applogic+MSDSInfo+ReturnMSDS

DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A
CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. - - - - - TRANSPORT INFORMATION - - - - -

CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. - - - - - REGULATORY INFORMATION - - - - -

EUROPEAN INFORMATION

EC INDEX NO: 034-002-00-8

VERY TOXIC

R 23/25

TOXIC BY INHALATION AND IF SWALLOWED.

R 33

DANGER OF CUMULATIVE EFFECTS.

R 50/53

VERY TOXIC TO AQUATIC ORGANISMS. MAY CAUSE LONG-TERM ADVERSE
EFFECTS IN THE AQUATIC ENVIRONMENT.

S 20/21

WHEN USING DO NOT EAT, DRINK OR SMOKE.

S 28

AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF SOAP SUDS.

S 61

AVOID RELEASE TO THE ENVIRONMENT. REFER TO SPECIAL INSTRUCTIONS/
SAFETY DATA SHEETS.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

ACGIH TLV-TWA 0.2 MG(SE)/M3

DTLVS* TLV/BEI, 1999

IARC CANCER REVIEW: ANIMAL INADEQUATE EVIDENCE IMEMDT 9, 245, 1975

IARC CANCER REVIEW: GROUP 3

IMSUDL 7, 56, 1987

MSHA STANDARD-AIR: TWA 0.2 MG(SE)/M3

DTLVS* 3, 224, 1971

OSHA PEL (GEN INDU): 8H TWA 0.2 MG(SE)/M3

CFRGR 29, 1910.1000, 1994

OSHA PEL (CONSTRUC): 8H TWA 0.2 MG(SE)/M3

CFRGR 29, 1926.55, 1994

OSHA PEL (SHIPYARD): 8H TWA 0.2 MG(SE)/M3

CFRGR 29, 1915.1000, 1993

OSHA PEL (FED CONT): 8H TWA 0.2 MG(SE)/M3

CFRGR 41, 50-204.50, 1994

OEL-ARAB REPUBLIC OF EGYPT: TWA 0.2 MG(SE)/M3, JAN1993

OEL-AUSTRALIA: TWA 0.2 MG(SE)/M3, JAN1993

OEL-AUSTRIA: MAK 0.1 MG(SE)/M3, JAN1999

OEL-BELGIUM: TWA 0.2 MG(SE)/M3, JAN1993

OEL-DENMARK: TWA 0.1 MG(SE)/M3, JAN1999

OEL-FINLAND: TWA 0.1 MG(SE)/M3, STEL 0.3 MG(SE)/M3, JAN1999

OEL-GERMANY: MAK 0.1 MG(SE)/M3, JAN1999

OEL-HUNGARY: STEL 0.1 MG(SE)/M3, JAN1993

OEL-THE NETHERLANDS: MAC-TGG 0.1 MG(SE)/M3, JAN1999

OEL-NORWAY: TWA 0.1 MG(SE)/M3, JAN1999

OEL-THE PHILIPPINES: TWA 0.2 MG(SE)/M3, JAN1993

OEL-POLAND: MAC(TWA) 0.1 MG(SE)/M3, JAN1993

OEL-SWEDEN: NGV 0.1 MG(SE)/M3, JAN1999

OEL-SWITZERLAND: MAK-W 0.1 MG(SE)/M3, JAN1999

OEL-TURKEY: TWA 0.2 MG(SE)/M3, JAN1993

OEL-UNITED KINGDOM: TWA 0.1 MG(SE)/M3, SEP2000

OEL IN ARGENTINA, BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV:

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV

NOHS 1974: HZD 84379; NIS 5; TNF 480; NOS 5; TNE 1198

NOES 1983: HZD 84379; NIS 7; TNF 741; NOS 19; TNE 10544; TFE 3736

EPA GENETOX PROGRAM 1988, POSITIVE: HISTIDINE REVERSION-AMES TEST

EPA GENETOX PROGRAM 1988, POSITIVE/DOSE RESPONSE: IN VITRO SCE-HUMAN

LYMPHOCYTES

EPA GENETOX PROGRAM 1988, POSITIVE/DOSE RESPONSE: IN VITRO SCE-HUMAN

EPA GENETOX PROGRAM 1988, POSITIVE/DOSE RESPONSE: IN VITRO UDS-HUMAN

FIBROBLAST

3/27/03

MAR-31-03 04:54pm FROM:MS&K 1878-341-0138 1-908 P.17717 F-931

EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(E) RISK NOTIFICATION, 8EHQ-0892-9100
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY 2001
NTP TOXICITY STUDIES, RPT# TOX-38, OCTOBER 2000

U.S. INFORMATION

THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.
SECTION 16. - - - - - OTHER INFORMATION - - - - -
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